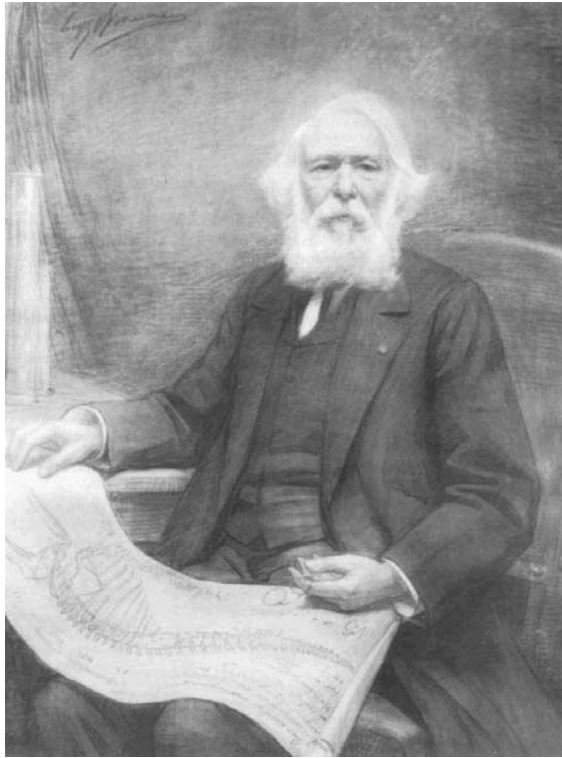


# The World's Very First Marine Research Station In Ostend (Belgium)

By [Matthias Breyne et al.](#), posted on August 18th, 2010 in [Biodiversity](#), [Ecosystems](#), [Featured Article](#), [Oceans](#)



*Pierre-Joseph van Beneden, the Belgian zoologist who developed the world's first marine station in Ostend*

In 1843, Pierre-Joseph van Beneden, a zoology professor at the [Leuven University](#) installed the world's very first marine research station in Ostend. In doing so the Belgian biologist was ahead of his time and of a wave of similar stations that would be built elsewhere in Europe and the world. His marine station would lay the foundation of a long tradition of marine institutes in Ostend, but it had disappeared until a recent, meticulous study of historical source material showed the exact location of this Belgian world first .

## A Renowned Pioneer Of Belgian Biology

Professor Pierre-Joseph van Beneden (1809-1894) started out as a pharmacy apprentice at Louis Stoffels' in Mechelen. Stoffels' collection of fossils, minerals and animals inspired him to study medicine in Leuven, and then to specialize in zoology at the [Natural History Museum](#) in Paris. In 1842 he was appointed professor of zoology at the Catholic University of Leuven, where he remained throughout his career. In the first years of his scientific career, parasitology had his undivided attention, and soon he became scientifically renowned for unraveling the life cycle of tape worms (Cestoda), demonstrating the link between the adult worms in the intestines of humans and the larval stages or cysticerci in pork or beef meat (at that time still considered as aberrant tissues). His experiments with dog puppies,

demonstrating that feeding them with cysticerci infested meat made them carry tape worms, were widely applauded and in 1858 he was awarded the “Grand prix des sciences physiques” of the Insitute of France. From 1859 on, van Beneden started to study whales and explored the embryology and anatomy of marine invertebrate animals. His fascination for whales goes back to the excavations being carried out in the formation of the fortifications at Antwerp and rendering a massive amount of fossil whale bones. Later on, that particular spot would remind him with pleasure of his military service, when he had to fight against Dutch troops at the occasion of the Belgian Revolution of 1830 but got easily distracted by fossil shells under the defensive walls of Antwerp: *“Je me souviens toujours qu’en combattant sous les murs d’Anvers, je me suis surprise plus d’une fois, une coquille fossile dans une main et une cartouche dans l’autre”* (“I still remember fighting under the walls of Antwerp, being distracted more than once, with a fossil shell in one hand and a cartridge in the other”). Together with the anatomist Paul Gervais, he wrote an extensive and richly illustrated book on fossil and living whales (‘The Osteology of Cetaceans, living and fossil’) that for long would be the standard work of reference on the subject. For the rest of his life, he would keep a fanatical interest in whales. In 1878, with the same extraordinary pertinacity and zeal, he also studied the fossil skeletons discovered in the Bernissart coal mine in Wallonia (Belgium) and determined that it belonged to an iguanodon dinosaur. Today, a collection of 30 complete *Iguanodon bernissartensis* skeletons can still be admired at the [Royal Museum for Natural History in Brussels](#).



*The world's first marine station at Ostend: the 'Dune laboratory' in the oyster farm of Valcke-Deknuyt*

### **The “Dune Laboratory” Attracts Illustrious Visitors**

For his marine research, Pierre-Joseph found a source of inspiration in Sweden and England. At that time in Kristineberg, Sven Lovén and other Swedish marine scientists joined a colony of naturalists to carry out marine research in what would later (1877) become a research station. England also knew its first coastal study activities in the first half of the 19th century. Pierre-Joseph van Beneden believed that initiatives like those would make his work more effective and avoid having to make long trips from the coast to Leuven with living specimens. Therefore, in 1843, he established at his own expense a modest laboratory on the east bank of the port of Ostend. This “laboratoire des Dunes” (“Dune laboratory”) was located on the grounds of the Valcke-Deknuyt oyster farm and belonged to his in-laws. The location explains why he would have good contacts over the Channel, since the “Ostendaise oyster” seed used to be imported from England. The work of van Beneden in Ostend would also lay the foundation for his pioneering research on (fish) parasites and on the animal life of the Belgian coast. Near the Ostend fish market, hundreds of fishing vessels and dozens of oyster

farms (“huîtres”) ensured him of a constant supply of fresh study material. As an illustration of the hard work being carried out at the Ostend facilities, he published a series of articles, entitled: ‘Recherches sur la faune littoral de Belgique.’



*Topographic map of Ostend, showing the location of the 19<sup>th</sup> century world's first marine station, the oyster farm Valcke-Deknuyt and the present InnovOcean site*

In the next few decades, this station would be the scene of a great deal of marine biological research and be a meeting place for many renowned Belgian and foreign researchers. The famous German physiologist, comparative anatomist and ichthyologist Johann Müller (1801-1858) spent several months in Ostend to carry out research together with P.-J. van Beneden. Pierre-Joseph describes how Müller spent two months at the Ostend station (Nov/December 1848) but searched in vain for Echinoderm larvae, the topic that later on would yield him the Cuvier award. Meanwhile, P.J. van Beneden managed to collect Echinoderm larvae after wintertime and described them in a note to the Academy of Science. Other Germans (August Krohn 1803-1891, Anton Schneider 1831-1890, Franz Schultze 1840-1921, Heinrich Pagenstecher 1825-1889, Christian Ehrenberg 1795-1876, Justus von Liebig 1803-1873,...) and top French scientists (Jean-Louis de Quatrefages 1810-1892, Henri de Lacaze-Duthiers 1821-1901, ...), as well as many Belgian and Dutch researchers (Julien Fraipont 1857-1910, Polydore Francotte 1851-1916, Félix Plateau 1841-1911, Richard De Greeff 1829-1892,...) found their way to the Ostend facility.

### **Inspired by Pierre-Joseph van Beneden**

With his pioneering founding of the station in Ostend, he inspired many reputable and in terms of size and equipment more visible stations that sprang up all over Europe from the second half of the 19th century onwards (Concarneau 1859, Roscoff 1872, Naples 1872, Wimereux 1875, Den Helder 1890 ).

His son Edouard van Beneden (1846-1910) followed in his father's footsteps and would become the leading professor of oceanography at the University of Liège. Edouard van

Beneden is credited with the discovery of meiosis or reductional division, a process of reductional division in which the number of chromosomes per cell is cut in half. He also founded a research station in Ostend in 1883, situated at walking distance from his father's station and developed in some governmental premises at the sluices of the Leopold sluice dock. Since childhood he got involved in his father's activities and spent many holidays in Ostend. Once he became professor at the Liège University, Edouard started to invite his students to the Ostend facilities and to organize excursions on a regular basis as a next step in trying to bridge the gap between scientific research and knowledge transfer.



*Some of the favorite study objects of Pierre-Joseph van Beneden were fish- and other parasites, marine invertebrates, and recent and fossil whales*

Despite many similarities, there were also major differences between father and son. van Beneden senior was a creationist: he believed that all plants and animals were put on earth just the way they are by the creator. On the other hand, van Beneden junior believed in Darwin's evolution theory, which he introduced with fervor in the Belgian academic world. This divergence of views however, never kept them from working in harmony. Pierre-Joseph had a reputation of being a gentle, modest and congenial personality, having the widest tolerance for the views of others.

### **From A Modest 19<sup>th</sup> Century Marine Station To The Present Innovocean Site**

The modest marine laboratory of Pierre-Joseph van Beneden attracted many visitors and was in use from 1843 till 1879. From then onwards, it seems to lose its appeal and finally was sold to a private buyer.. After being bombed in the first World War, the expansion of the harbor channel and construction of new docks and a new fish auction hall transformed the site. These days the very spot of the station and the oyster farm is part of the harbor channel and – at a distance of less than 200 meters – located within a stone's throw of the [Flanders Marine Institute](http://www.vliz.be) (VLIZ, InnovOcean site). This [InnovOcean](http://www.vliz.be) site has become a major centre of international oceanography after the UNESCO's IOC Project Office for IODE (April 2005) and the Marine Board-ESF (May 2008) were held. As VLIZ is the natural successor of the Institute of Marine Scientific Research (IZWO: 1970-1999) and the Marine Science Institute (ZWI: 1927-1967) in Ostend, the latter being realized and directed by a disciple of Pierre-Joseph van Beneden (Gustave Gilson), it looks like things have come full circle!

**Matthias Breyne, Jan Seys, Ann-Katrien Lescrauwaet, Heidi Debergh, Jan Haspeslagh, Heike Lust & Jan Mees** (Flanders Marine Institute: <http://www.vliz.be>; correspondence address: [ann-katrien.lesrauwaet@vliz.be](mailto:ann-katrien.lesrauwaet@vliz.be))

